

UTILITY  
PATENT APPLICATION  
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

369212000131

Total Pages

30

First Named Inventor or Application Identifier

Hirokazu SUGIHARA et al.

Express Mail Label No.

EL569176734US

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Gary Paulazzo

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☒ Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)
2. ☒ Specification [Total Pages 8]  
(preferred arrangement set forth below)
  - Descriptive title of the Invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to Microfiche Appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
3. ☒ Drawing(s) (35 USC 113) [Total Sheets 12]
4. ☒ Oath or Declaration [Total Pages 3]
  - a. ☐ Newly executed (original or copy)
  - b. ☒ Copy from a prior application (37 CFR 1.63(d)  
(for continuation/divisional with Box 17 completed)  
[Note Box 5 below]
  - i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in  
the prior application, see 37 CFR 1.63(d)(2) and 1.33(b)
5. ☒ Incorporation By Reference (useable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the  
oath or declaration is supplied under Box 4b, is considered as being  
part of the disclosure of the accompanying application and is hereby  
incorporated by reference therein

6. ☐ Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)
  - a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure  
Statement (IDS)/PTO-1449 ☐ Copies of IDS  
Citations
12. ☒ Preliminary Amendment - 5 pages
13. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
14. ☐ Small Entity ☐ Statement filed in prior application,  
Statement(s) Status still proper and desired
15. ☐ Certified Copy of Priority  
Document(s) (if foreign priority is  
claimed)
16. ☐

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior reissue application No: 09/169,188 filed October 8, 1998.

18. CORRESPONDENCE ADDRESS

E. Thomas Wheelock  
Registration No. 28,825

Morrison & Foerster LLP  
755 Page Mill Road  
Palo Alto, California 94304-1018  
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Facsimile: (650) 494-0792

- ☒ If a paper is untimely filed in the above-referenced application by applicant or his/her representative, the Assistant Commissioner is hereby petitioned under 37 C.F.R. § 1.136(a) for the minimum extension of time required to make said paper timely. In the event a petition for extension of time is made under the provisions of this paragraph, the Assistant Commissioner is hereby requested to charge any fee required under 37 C.F.R. § 1.17(a)-(d) to **Deposit Account No. 03-1952**. However, the Assistant Commissioner is **NOT** authorized to charge the cost of the issue fee to the Deposit Account.

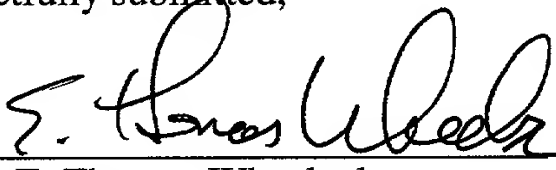
The filing fee has been calculated as follows:

FOR	NUMBER FILED	NUMBER EXTRA	RATE	CALCULATIONS
TOTAL CLAIMS	10 - 20 =	0	x \$18.00	\$0.00
INDEPENDENT CLAIMS	1 - 3 =	0	x \$80.00	\$0.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0.00
			BASIC FEE	\$710.00
			TOTAL OF ABOVE CALCULATIONS =	\$710.00
Reduction by 1/2 for filing by small entity (Note 37 C.F.R. §§ 1.9, 1.27, 1.28). If applicable, verified statement must be attached.				\$0.00
Assignment Recording Fee (if enclosed)				\$0.00
			TOTAL =	\$710.00

- ☒ A check in the amount of \$710.00 is attached.
- ☐ Charge \$710.00 to **Deposit Account No. 03-1952** referencing docket no. 369212000131.
- Applicant(s) hereby petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees or to credit any overpayment to **Deposit Account No. 03-1952** referencing docket no. 369212000131.

Dated: October 13, 2000

Respectfully submitted,

By:   
E. Thomas Wheelock  
Registration No. 28,825

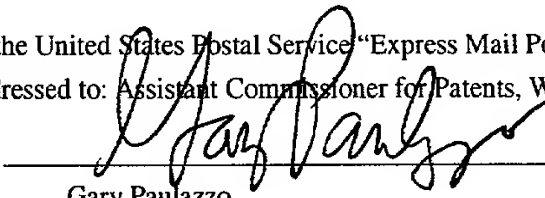
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Gary Paulazzo

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Reissue Application of:

Hirokazu SUGIHARA et al.

Patent No.: 5,563,067

Issue Date: October 8, 1996

Reissue Serial No.: To be assigned

Reissue Filing Date: Herewith

For: CELL POTENTIAL MEASUREMENT  
APPARATUS HAVING A PLURALITY  
OF MICROELECTRODES

Examiner: D. Redding

Group Art Unit: 1744

PRELIMINARY AMENDMENT

Box REISSUE  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Prior to examination on the merits, Patentees respectfully requests entry of this Amendment for the above-captioned reissue patent application. This is a continuation application of a reissue application. **A one-month Petition for Extension of Time was timely filed in an RCE for the parent application therefore this continuation is timely filed.** This

application has been filed to isolate the claims having a so-called “re-capture” rejection under 35 U.S.C. §251 for consideration on appeal.

Patentees respectfully request that the Commissioner cause several patents to be issued for distinct and separate parts of the thing patented. *Cf.* 37 C.F.R. 1.177. The Examiner is directed to MPEP 1451, 7th ed., where it states the following:

A continuation of a reissue is by definition not “for distinct and separate parts of the thing patented” as called for in the second paragraph of 35 U.S.C. 251. The decision of *In re Graff*, 111 F.3d 874, 42 USPQ2d 1471 (Fed. Cir. 1997) interprets 35 U.S.C. 251 to permit multiple reissue patents to issue even where the multiple reissue patents are not for “distinct and separate parts of the thing patented.” . . . Accordingly, a continuation of a reissue application will be permitted to issue (despite the presence of the parent reissue) where the continuation complies with the rules for reissue.

Therefore, Patentees respectfully request entry of this Amendment for the above-captioned reissue patent application.

## AMENDMENTS

### In the Claims

Please amend the claims as indicated below.

**Please cancel claims 1-13 without prejudice.**

**Please add the following new claims 14-23.**

--14. A measurement apparatus for continuous, simultaneous measurement of electrical physiological complex waveforms from neural samples, comprising:

(A) an integrated neural sample holding instrument provided with a plurality of microelectrodes arranged in a matrix form and adherent to a substrate, conductive pathways connected to the microelectrodes, said microelectrodes being within a neural sample holding part which is constructed to contain said at least one said neural sample and including said plurality of microelectrodes; said conductive pathways for providing electric stimulation signals to said microelectrodes and for leading out an electric signal from said microelectrodes;

(B) a signal processor connectable to said conductive pathways of said integrated neural sample holding instrument suitable for processing said signals arising from electric physiological activities of said at least one neural sample and reflecting said signals as said complex waveforms, and

(C) a stimulation signal supply connectable to all of said conductive pathways for providing electric stimulation to said neural sample.

15. The measurement apparatus of claim 14 further comprising a culturing apparatus for maintaining an environment for culturing said neural sample on said integrated neural sample holding instrument.

16. The measurement apparatus of claim 15 wherein the culturing apparatus comprises a temperature adjustment for maintaining a constant temperature, a circulator for circulating a solution, and a gas supply.

17. The measurement apparatus of claim 14 wherein said plurality of microelectrodes comprise 64 electrodes arranged in eight columns and eight rows.

18. The measurement apparatus of claim 14 wherein said microelectrodes each have an electrode area of  $4 \times 10^2 \mu\text{m}^2$  to  $4 \times 10^4 \mu\text{m}^2$ .

19. The measurement apparatus of claim 14 further comprising an optical microscope, an image pick-up device, and an image display device connected to the optical microscope.

20. The measurement apparatus of claim 19 further comprising an image storage device.

21. The measurement apparatus of claim 14 wherein said stimulation signal supply comprises a pulse signal generator.

22. The measurement apparatus of claim 14 wherein said signal processor further comprises a multichannel amplifier which amplifies said signal arising from neural sample activities and a multi-channel display device which displays an amplified signal waveform in real-time.

23. The measurement apparatus of claim 22 further comprising a computer which outputs said stimulation signal via a D/A converter and receives and processes an output signal arising from electric physiological activities of said neural sample via an A/D converter.--

### REMARKS

These new claims correspond to claims 14 and 16-24 as found in the parent application. One claim (current claim 21, former claim 22) has been amended to obviate a rejection under 35 U.S.C. §112, second paragraph, found in the parent. Therefore, claims 1-13 are currently canceled and new claims 14-23 are currently pending. As the new claims correspond to those found in the parent application, no new matter has been introduced. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented.

### CONCLUSION

Consideration and allowance of the pending claims are respectfully requested. If it is determined that a telephone conversation would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

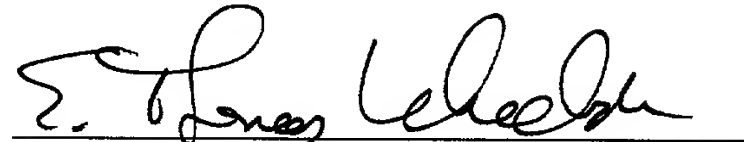
In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 369212000131. However,

the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: 10/12, 2000

By:



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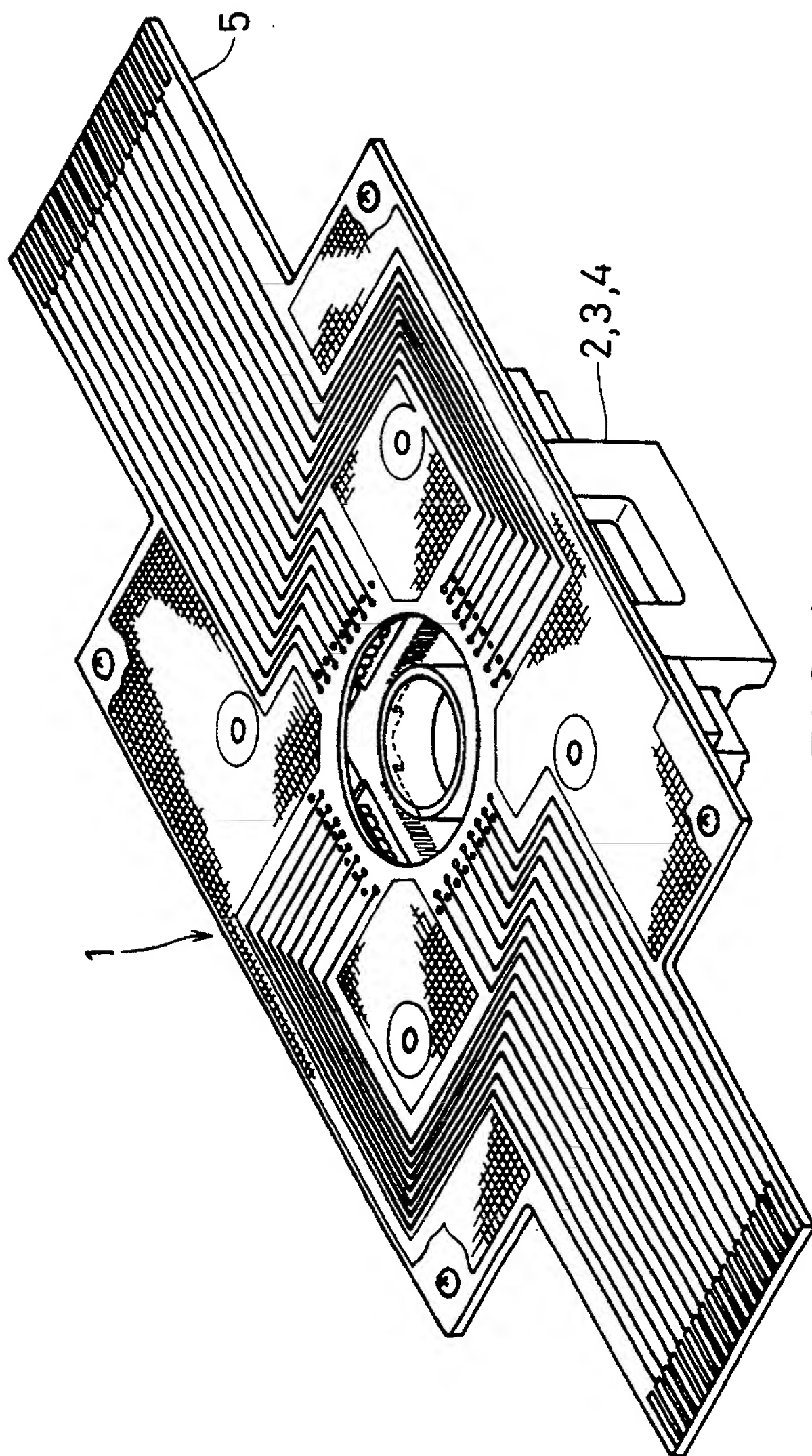
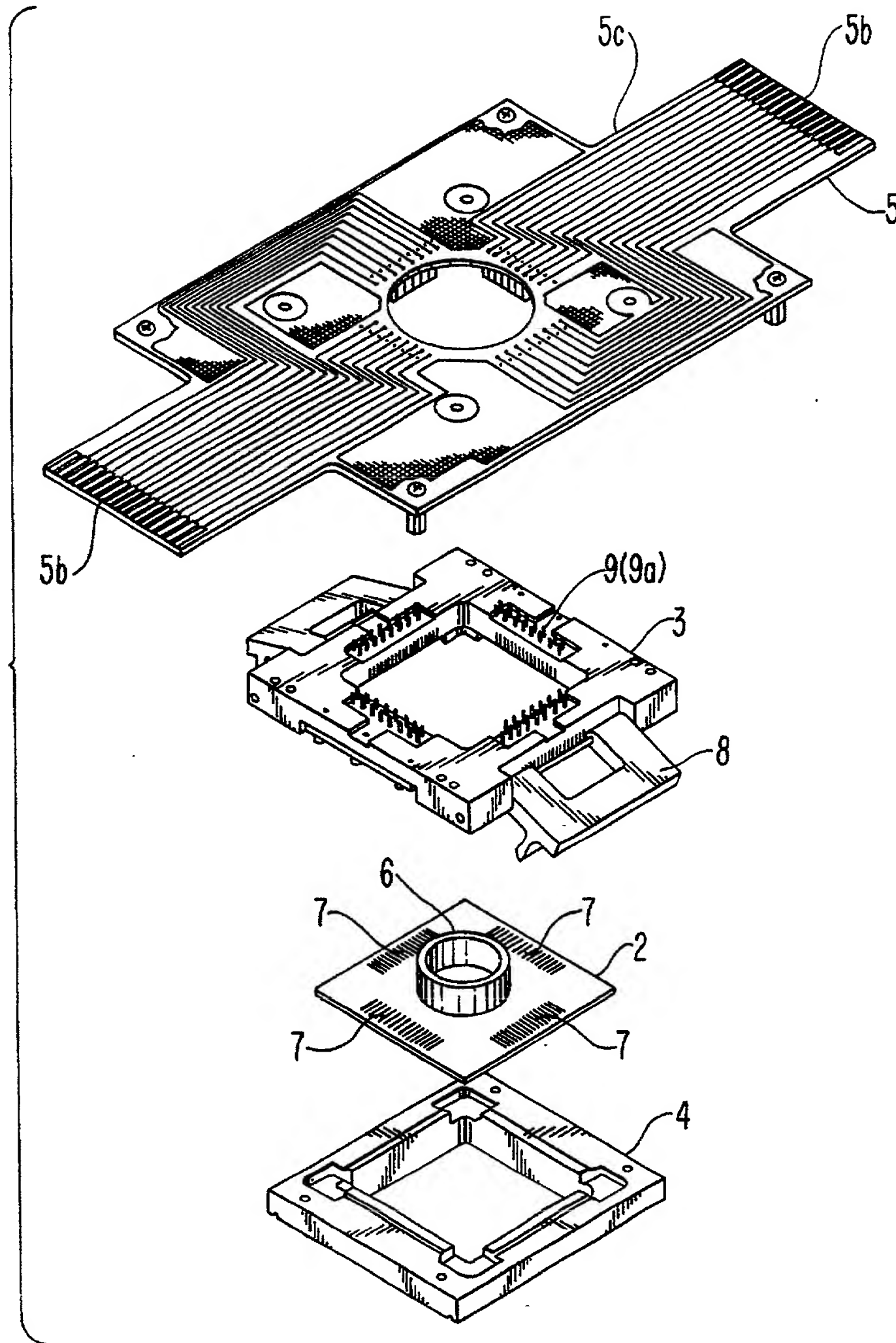


FIG. 1



**FIG. 2**



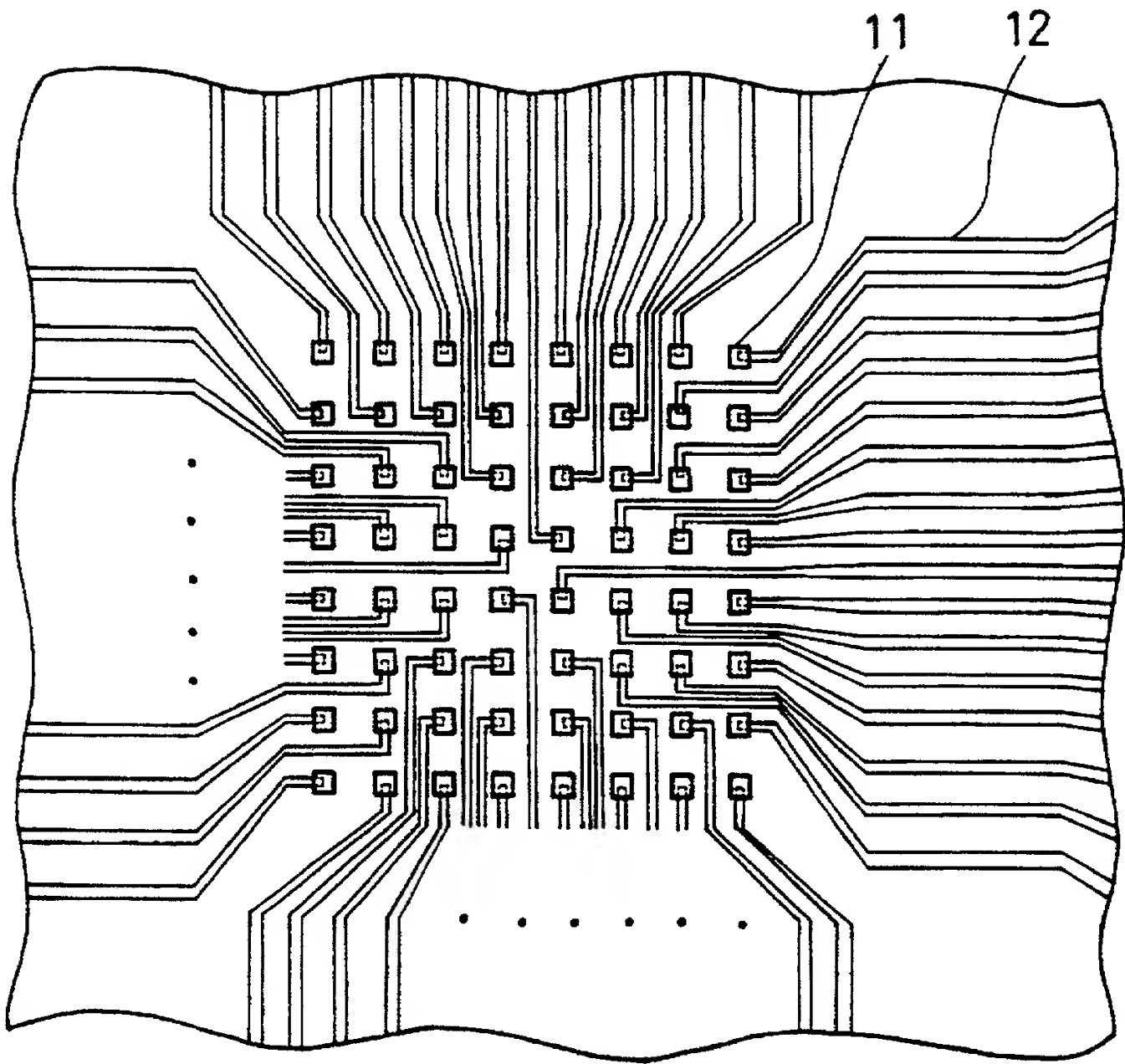


FIG. 3

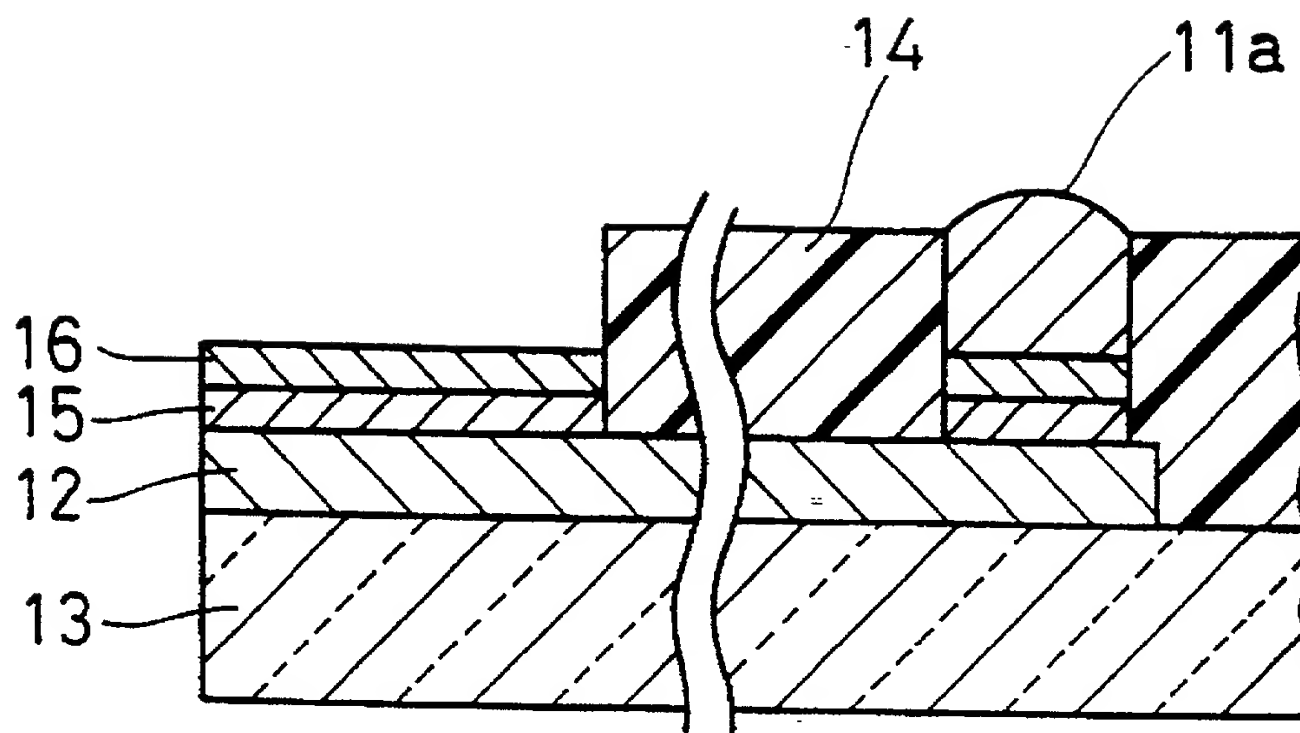


FIG. 4

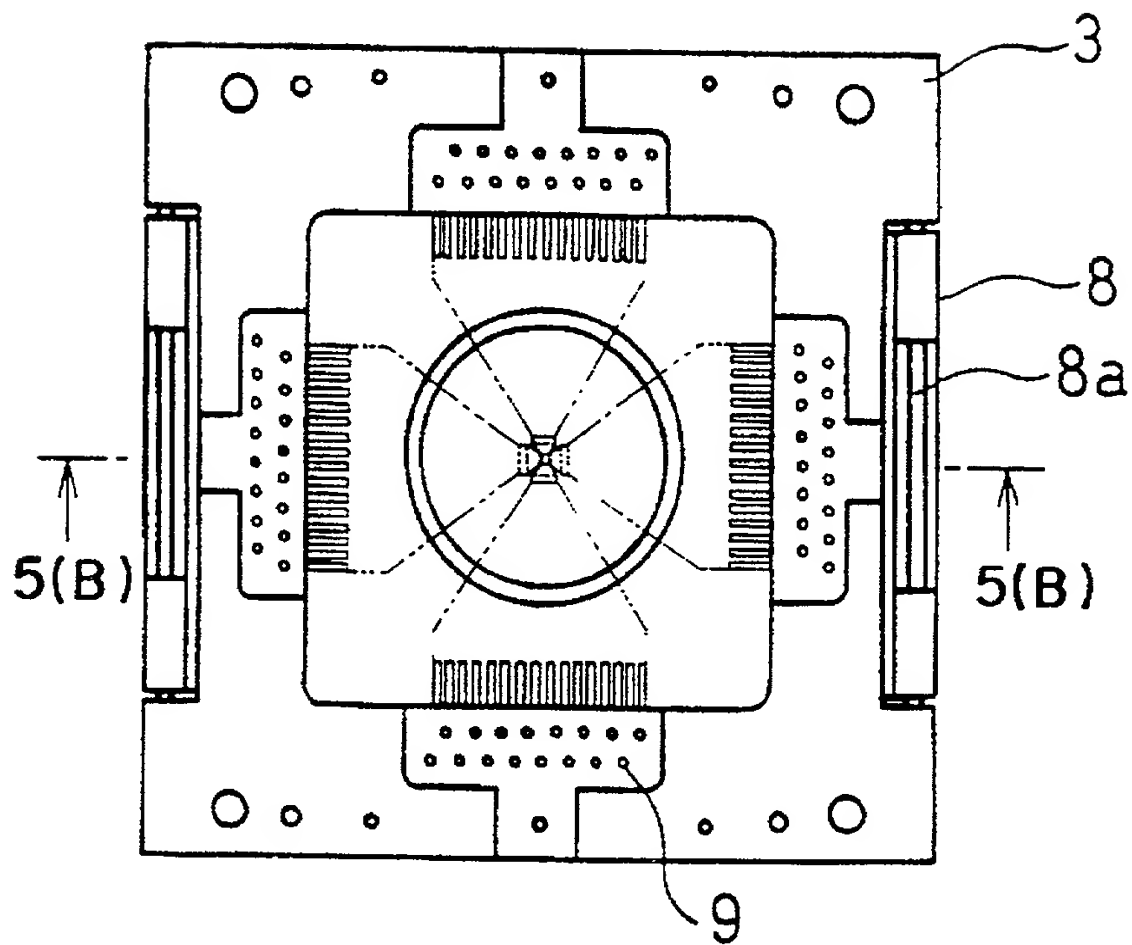


FIG. 5 (A)

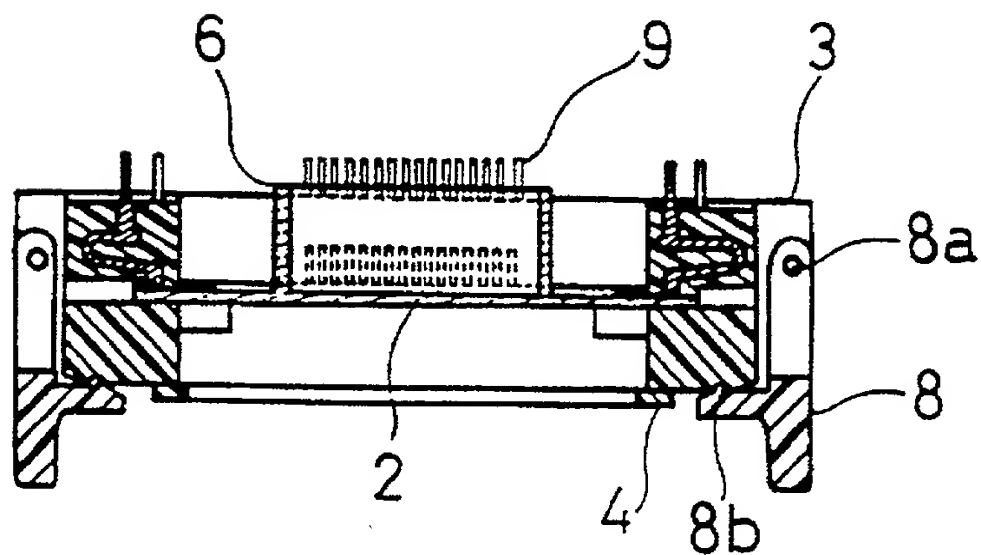


FIG. 5 (B)

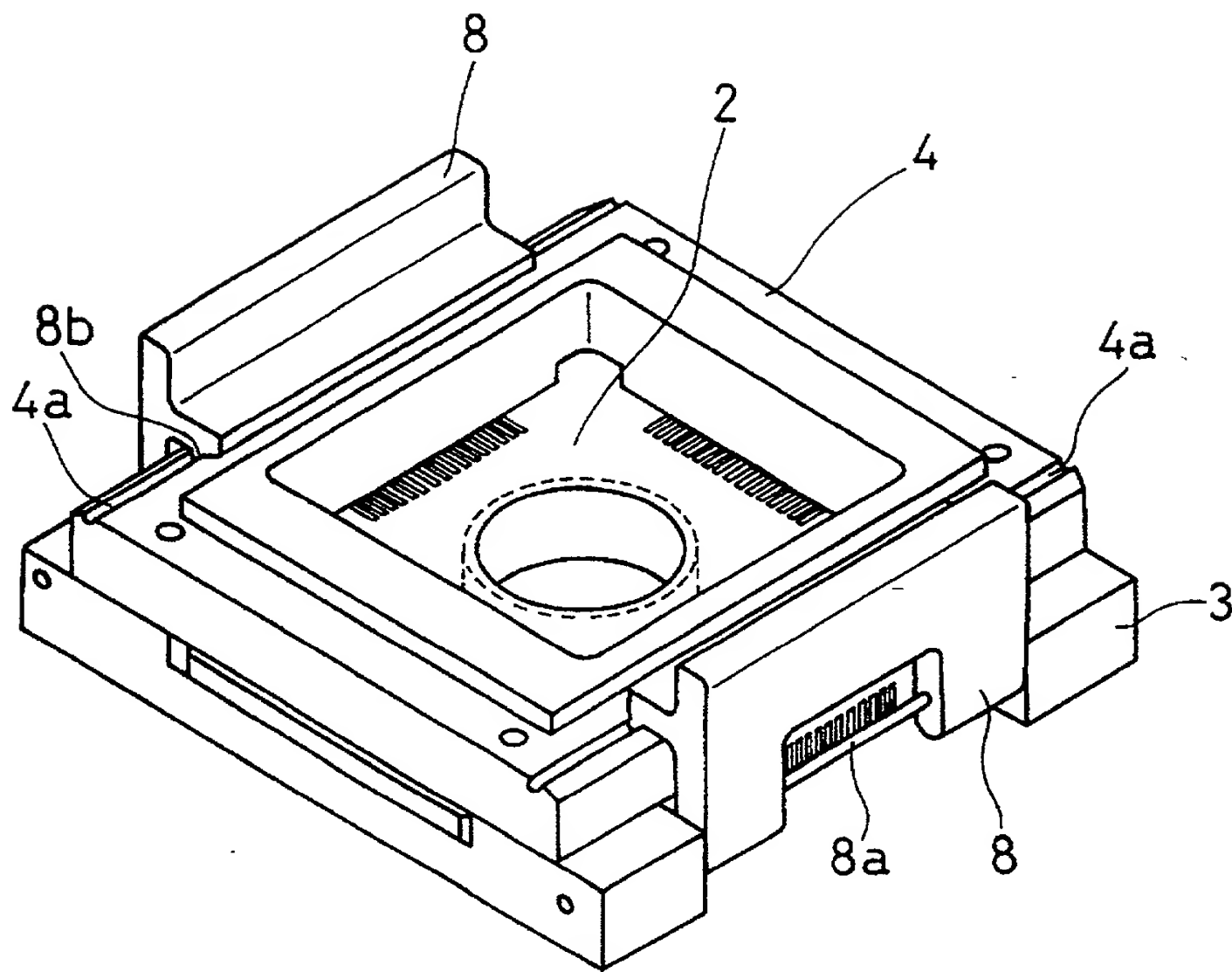


FIG. 6

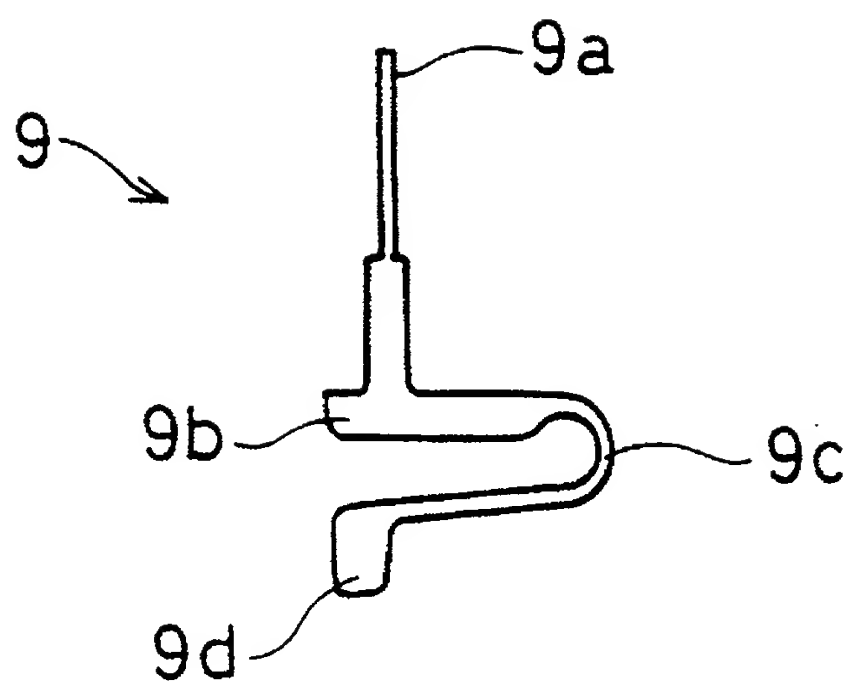
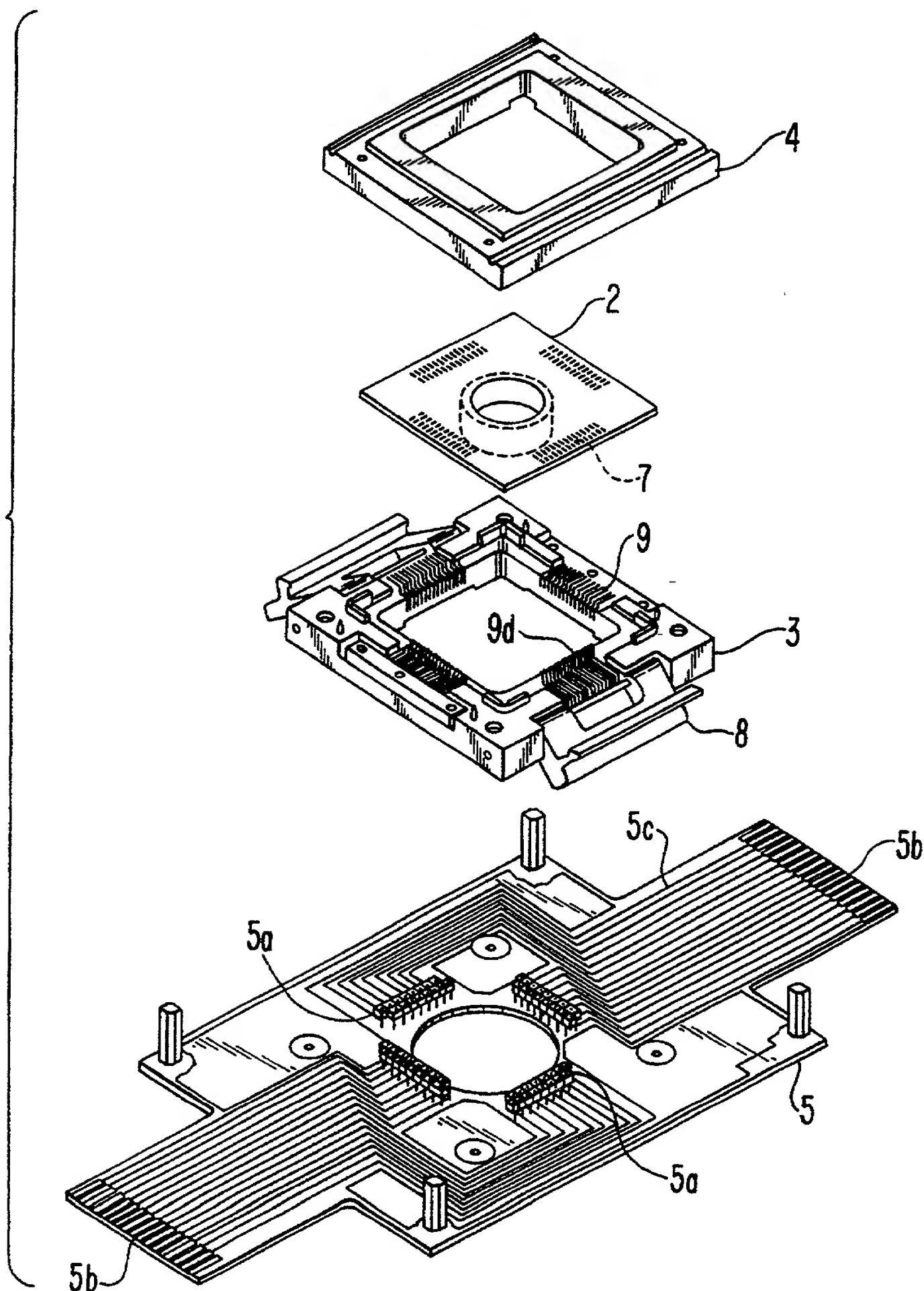


FIG. 7

**FIG. 8**



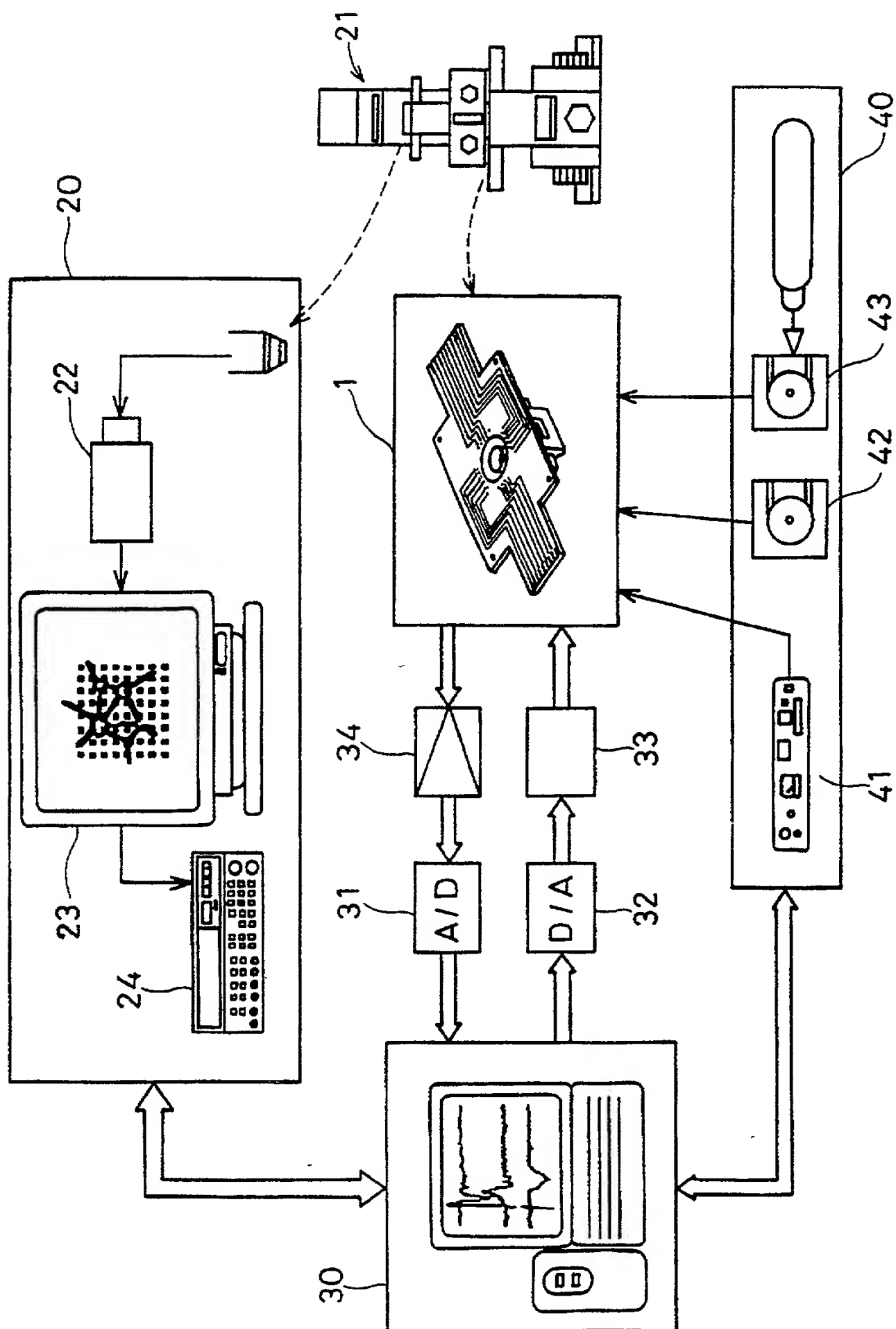


FIG. 9



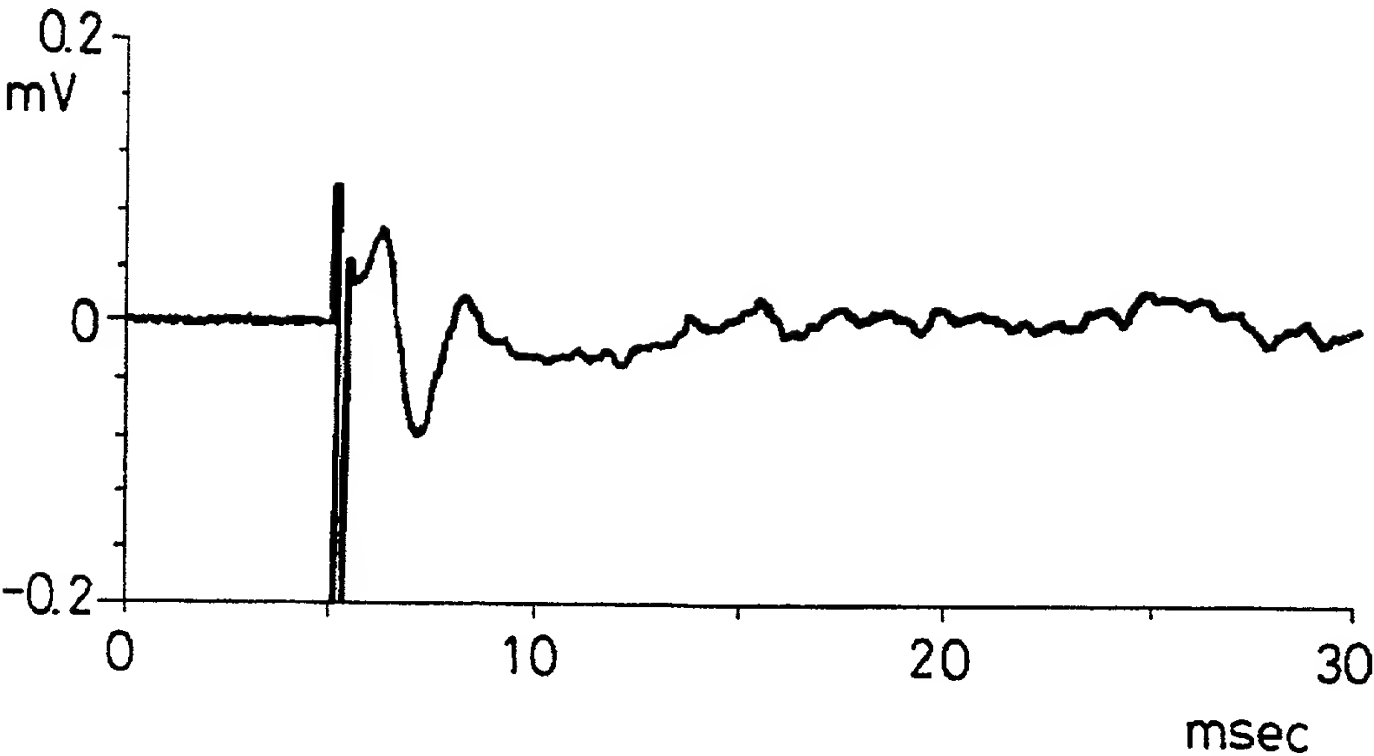


FIG.10 (A)

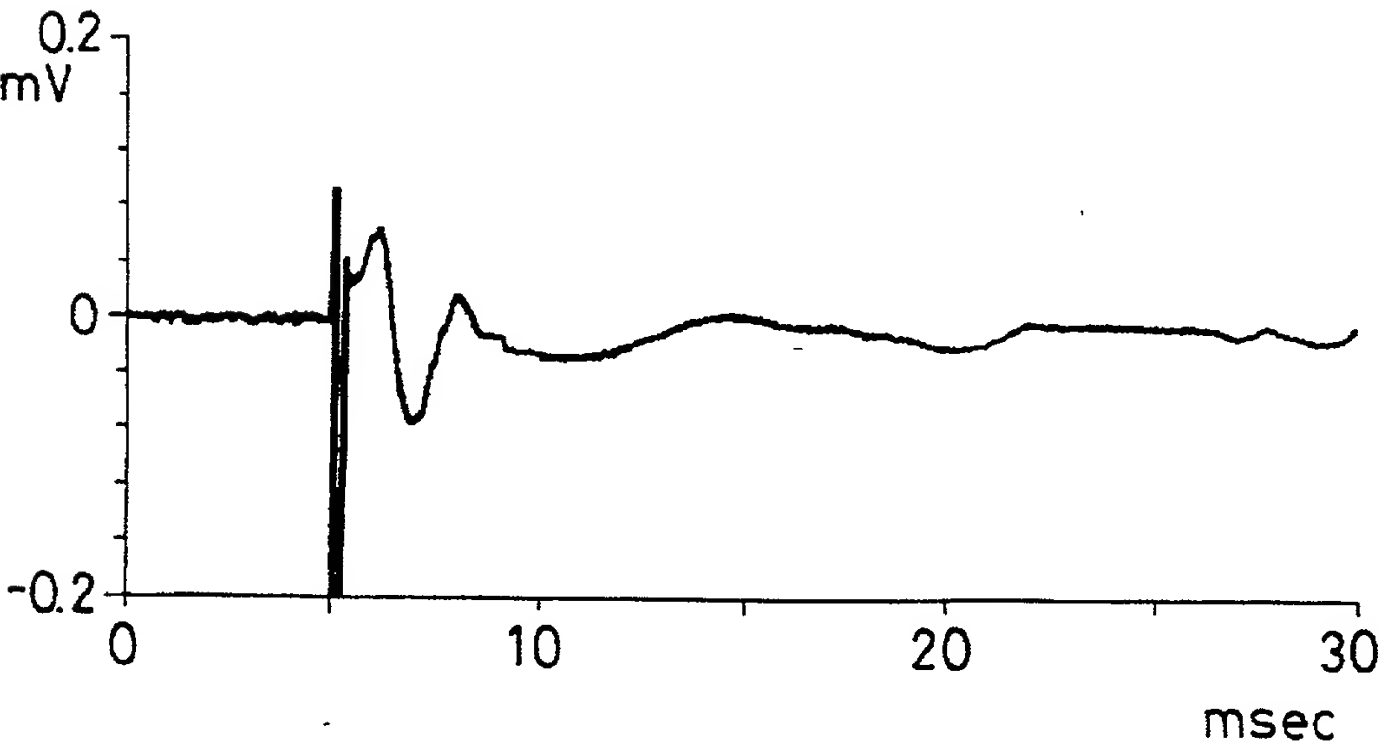


FIG.10(B)



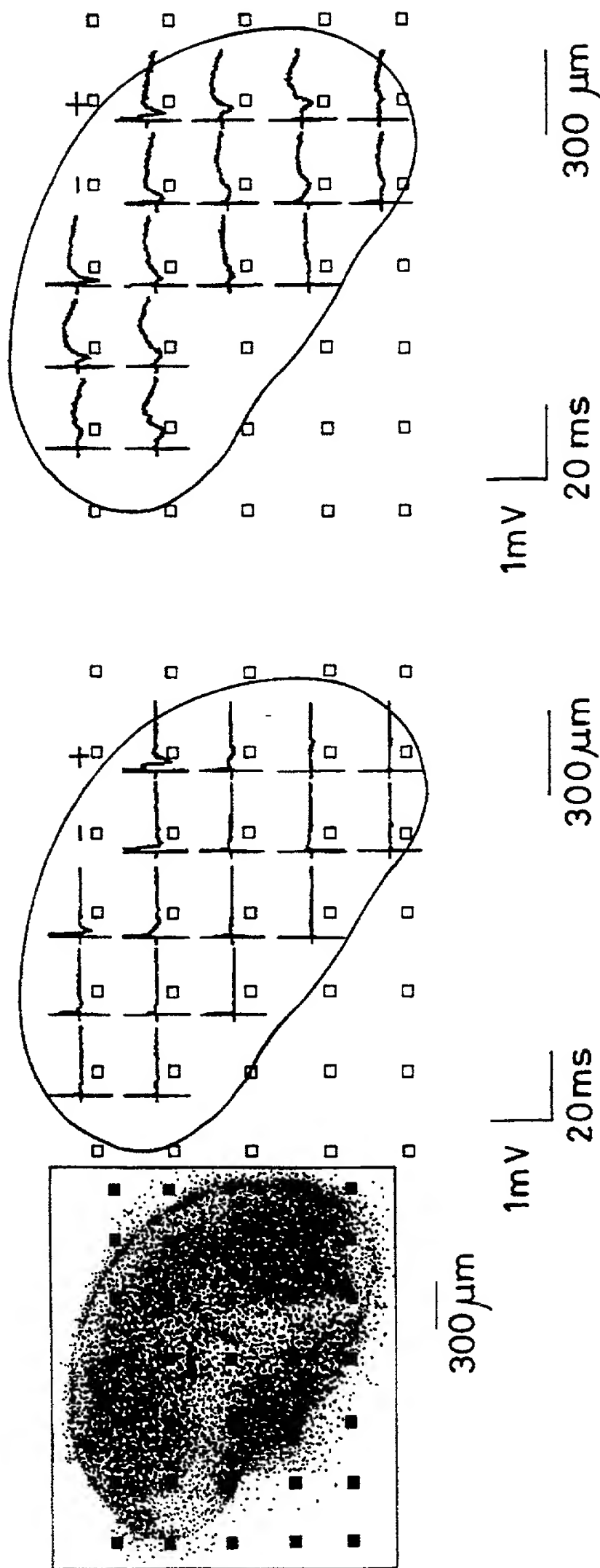


FIG.12(A)

FIG.12 (B)

FIG.12 (C)

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Date: 01-06-99

Signature: *A. Mello*  
Annette M. Mello

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the reissue application of:

SUGIHARA et al.

Patent No.: 5,563,067

Issue Date: October 8, 1996

For: CELL POTENTIAL MEASUREMENT  
APPARATUS HAVING A PLURALITY  
OF MICROELECTRON

Reissue App. No. 09/169,188

Filed: October 8, 1998

COPY

REISSUE APPLICATION DECLARATION BY INVENTOR

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name, I believe I am an original, first and joint inventor of the subject matter that is described and claimed in letters patent number 5,563,067, granted on October 8, 1996, as amended in the accompanying specification, and in the foregoing specification, and for which invention I solicit a reissue patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

# COPY

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 C.F.R. § 1.56(a) and (b).

I hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application for patent listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

EARLIEST FOREIGN APPLICATION(S) IF ANY FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION			
COUNTRY (if PCT indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. § 119
Japan	6-130176	13/6/94	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

ALL FOREIGN APPLICATION(S) IF ANY FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION			
COUNTRY (if PCT indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. § 119
N/A			<input type="checkbox"/> YES <input type="checkbox"/> NO

## STATEMENT OF INOPERATIVENESS OR INVALIDITY OF ORIGINAL PATENT

That I believe the original patent to be wholly or partly inoperative or invalid because I claimed more or less than I, as patentee, had a right to claim in the patent. (37 C.F.R. § 1.175(a)(1)) and that all errors which are being corrected in this reissue application arose without any deceptive intent on my part (37 C.F.R. § 1.175(a)(2)).

As one instance of my claiming less than I had a right to claim, claim 1, as issued, required the "microelectrodes [to be] arranged in a matrix form on the surface of a glass plate." The limitation that the plate be "glass" is unnecessary.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

COPY

December 8, 1998

Date

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December 8, 1998

Date

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46-4-103 Yamadaikehigashimachi, Hirakata-shi, Osaka 573-0165 JAPAN

December 8, 1998

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December 8, 1998

Date

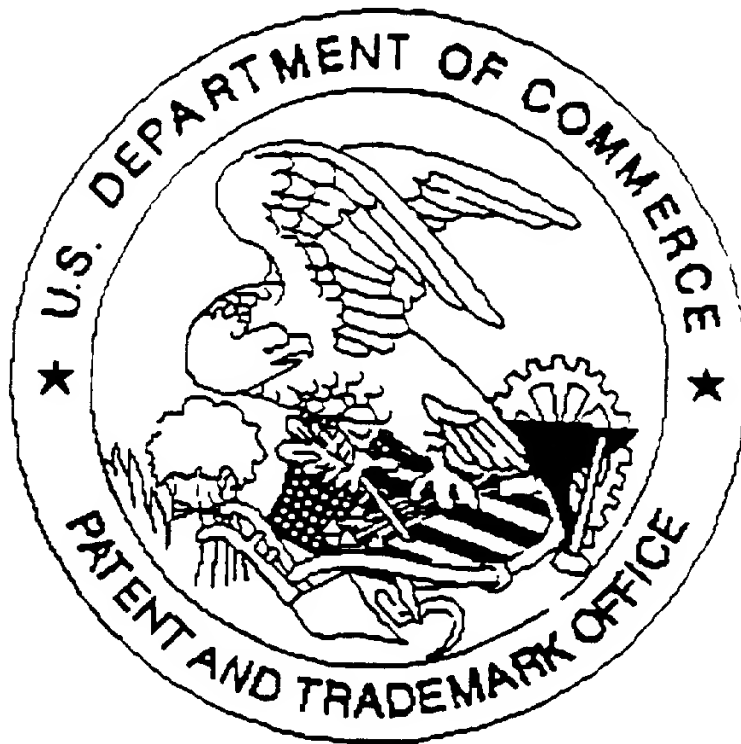
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